What is claimed is:

1. A method of making a low VOC epoxy coating, comprising:

drying an epoxy resin and a blocked amine;

combining and mixing the epoxy resin, the blocked amine, and a first solvent to form the single component epoxy coating precursor, the single component epoxy coating precursor having a VOC level of less than about 3 lbs/gal; and

exposing the single component epoxy coating precursor to water, the single component epoxy coating precursor and water reacting to form the low VOC epoxy coating.

2. The method of claim 1 wherein the single component epoxy coating precursor has a VOC level of less than about 2.8 lbs/gal.

3. The method of claim 1 further comprising adding a reactive diluent to the single component epoxy coating precursor.

4. The method of claim 3 wherein the reactive diluent is selected from modified glycidyl ethers, acrylates, methacrylates, urethane acrylates and combinations thereof.

5. The method of claim 3 wherein the reactive diluent comprises a modified glycidyl ether.

6. The method of claim 1 further comprising adding a water scavenger to the the single component epoxy coating precursor.

7. The method of claim 6 wherein the water scavenger is selected from molecular sieves, monocyclic bifunctional oxazolidines and combinations thereof.

8. The method of claim 1 wherein the first solvent is selected from acetone, p-chlorobenzotrifluoride, t-butyl acetate, methyl isobutyl ketone, methyl propyl ketone and combinations thereof.

9. The method of claim 1 wherein the epoxy resin is selected from aliphatic epoxy resins, cycloaliphatic epoxy resins, aromatic epoxy resins and combinations thereof.

10. The method of claim 1 wherein the epoxy resin comprises a difunctional bisphenol A/epichlorohydrin derived epoxy resin.

11. The method of claim 1 wherein the viscosity of the single component epoxy coating precursor after 30 days at a temperature of 55°C is less than 16 stokes.

12. The method of claim 1 wherein the viscosity of the single component epoxy coating precursor after 30 days at a temperature of 55°C is less than 13 stokes.

13. The method of claim 1 wherein the viscosity of the single component epoxy coating precursor after 30 days at a temperature of 55°C is less than 7 stokes.

14. The method of claim 1 wherein the blocked amine comprises a ketone-based blocked amine.

15. The method of claim 14 wherein the ketone-based blocked amine includes a ketone having a molecular weight in the range of about 30 to about 600.

16. The method of claim 14 wherein the ketone-based blocked amine includes a ketone containing between about 3 and 14 carbon atoms.

17. The method of claim 1 wherein the blocked amine comprises an aldehyde-based blocked amine.

18. The method of claim 17 wherein the aldehyde-based blocked amine includes an aldehyde having a molecular weight in the range of about 30 about 600.

19. The method of claim 17 wherein the aldehyde-based blocked amine includes an aldehyde containing between about 2 and 14 carbon atoms.

20. The method of claim 1 wherein the blocked amine comprises a methyl isobutyl ketone-xylylenediamine based blocked amine.

21. The method of claim 1 further comprising adding a pigment.

22. The method of claim 21 wherein the pigment is selected from titanium dioxide, diarylide yellow, iron oxide, raw umber, burnt umber, phthalocyanine blue, cobalt blue, chinese blue, phthalocyanine green, toluidine red, quinacridone red, dicerylide orange, carbon black, furnale black, lampblack, leafing aluminum and non-leaving aluminum.

23. The method of claim 1 wherein the blocked amine is made by a process comprising:

mixing a solvent capable of forming an azeotrope with water, an amine, and an amine blocker selected from ketones and aldehydes in a reaction vessel to form a reaction mixture;

removing ambient moisture from the reaction vessel;

reacting the amine and the amine blocker to form the blocked amine and water of reaction;

removing the water of reaction from the reaction mixture while the amine and the amine blocker are reacted; and

recovering the blocked amine while maintaining the absence of moisture.

24. The method of claim 23 wherein the solvent capable of forming an azeotrope with water is capable of forming a binary or ternary azeotrope with water.

25. The method of claim 23 wherein the solvent capable of forming an azeotrope with water is selected from toluene, xylene and combinations thereof.

26. The method of claim 23 wherein the solvent capable of forming an azeotrope with water comprises toluene.

27. The method of claim 23 wherein the amine comprises a polyamine.

28. The method of claim 23 wherein the amine is selected from diethylenetriamine, m-xylylenediamine and combinations thereof.

29. The method of claim 23 wherein the amine comprises m-xylylenediamine.

30. The method of claim 23 wherein the amine blocker is a ketone.

31. The method of claim 30 wherein the ketone has a molecular weight in the range of about 30 to about 600.

32. The method of claim 30 wherein the ketone contains between about 3 and 14 carbon atoms.

33. The method of claim 30 wherein the ketone is selected from methyl isobutyl ketone, methyl ethyl ketone, acetone, phorone, heptanedione, tetramethylheptanedione, adamantone, acetonyl acetone, methylpropylketone and combinations thereof.

34. The method of claim 30 wherein the ketone comprises methyl isobutyl ketone.

35. The method of claim 23 wherein the amine blocker is an aldehyde.

36. The method of claim 35 wherein the aldehyde has a molecular weight in the range of about 30 to about 600.

37. The method of claim 35 wherein the aldehyde contains between about 2 and 14 carbon atoms.

38. The method of claim 35 wherein the aldehyde is selected from benzaldehyde, salicylaldehyde and combinations thereof.

39. The method of claim 35 wherein the aldehyde comprises benzaldehyde.

40. The method of claim 23 wherein the solvent capable of forming an azeotrope with water comprises toluene, the amine comprises m-xylylenediamine, and the amine blocker comprises methyl isobutyl ketone.

41. A low VOC epoxy coating comprising:

a reaction product of a single component epoxy coating precursor and water, the single component epoxy coating precursor comprising an epoxy resin, a first solvent, and a blocked amine, the single component epoxy coating precursor having a VOC level of less than about 3 lbs/gal.

42. The low VOC epoxy coating of claim 41 wherein the single component epoxy coating precursor has a VOC level of less than about 2.8 lbs/gal.

43. The low VOC epoxy coating of claim 41 wherein the single component epoxy coating precursor has a viscosity after 30 days at a temperature of 55°C of less than 16 stokes.

44. The low VOC epoxy coating of claim 41 wherein the viscosity of the single component epoxy coating precursor after 30 days at a temperature of 55°C is less than 13 stokes.

45. The low VOC epoxy coating of claim 41 wherein the viscosity of the single component epoxy coating precursor after 30 days at a temperature of 55°C is less than 7 stokes.

46. The low VOC epoxy coating of claim 41 wherein the epoxy resin is selected from aliphatic epoxy resins, cycloaliphatic epoxy resins, aromatic epoxy resins and combinations thereof.

47. The low VOC epoxy resin coating of claim 41 wherein the epoxy resin comprises a difunctional bisphenol A/epichlorohydrin derived epoxy resin.

48. The low VOC epoxy resin coating of claim 41 wherein the first solvent is selected from acetone, p-chlorobenzotrifluoride, t-butyl acetate, methyl isobutyl ketone, methyl propyl ketone and combinations thereof.

49. The low VOC epoxy resin coating of claim 41 wherein the blocked amine comprises a ketone-based blocked amine.

50. The low VOC epoxy resin coating of claim 49 wherein the ketone-based blocked amine includes a ketone having a molecular weight in the range of about 30 to about 600.

51. The low VOC epoxy resin coating of claim 49 wherein the ketone-based blocked amine includes a ketone containing between about 3 and 14 carbon atoms.

52. The low VOC epoxy resin coating of claim 41 wherein the blocked amine comprises an aldehyde-based blocked amine.

53. The low VOC epoxy resin coating of claim 52 wherein the aldehyde-based blocked amine includes an aldehyde having a molecular weight in the range of about 30 to about 600.

54. The low VOC epoxy resin coating of claim 52 wherein the aldehyde-based blocked amine includes an aldehyde containing between about 2 and 14 carbon atoms.

55. The low VOC epoxy coating of claim 41 wherein the blocked amine comprises a methyl isobutyl ketone-xylylenediamine based blocked amine.

56. The low VOC epoxy coating of claim 41 wherein the single component epoxy coating precursor further comprises a reactive diluent.

57. The low VOC epoxy coating of claim 56 wherein the reactive diluent is selected from modified glycidyl ethers, acrylates, methacrylates, urethane acrylates and combinations thereof.

58. The low VOC epoxy coating of claim 56 wherein the reactive diluent comprises a modified glycidyl ether.

59. The low VOC epoxy coating of claim 41 wherein the single component epoxy coating precursor further comprises a water scavenger.

60. The low VOC epoxy coating of claim 59 wherein the water scavenger is selected from molecular sieves, monocyclic bifunctional oxazolidines and combinations thereof.

61. The low VOC epoxy coating of claim 41 further comprising adding a pigment.

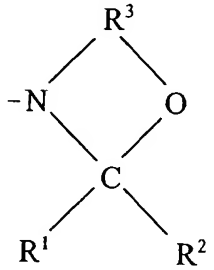
62. The method of claim 61 wherein the pigment is selected from titanium dioxide, diarylide yellow, iron oxide, raw umber, burnt umber, phthalocyanine blue, cobalt blue, chinese blue, phthalocyanine green, toluidine red, quinacridone red, dicerylide orange, carbon black, furnale black, lampblack, leafing aluminum and non-leaving aluminum.

63. The method of claim 1 wherein the first solvent has an intermediate polar solubility parameter and an intermediate hydrogen bonding solubility parameter.

64. The low VOC epoxy resin coating of claim 41 wherein the first solvent has an intermediate polar solubility parameter and an intermediate hydrogen bonding solubility parameter.

65. The method of claim 1 with the proviso that the blocked amine is not the reaction product of one or more compounds containing at least one epoxy group and one or more imines having at least one amino hydrogen.

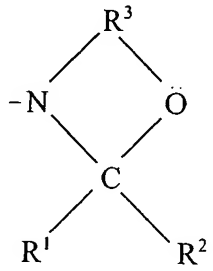
66. The method of claim 1 with the proviso that the blocked amine is not a heterocycle-containing compound having a backbone chain selected from the group consisting of polyether, polyvinyl, polyester, polyamide, polycarbonate, and novalac chains and at least two heterocyclic groups of the following general formula as side chains,



wherein R^1 and R^2 may be the same or different and each represents hydrogen, straight chain or branched C_1 to C_6 alkyl or alkenyl, or C_6 to C_8 aryl; or R^1 and R^2 taken together with the adjacent carbon atom, represents C_5 to C_7 cycloalkyl: R^3 represents C_1 to C_{10} alkylene.

67. The low VOC epoxy coating of claim 41 with the proviso that the blocked amine is not the reaction product of one or more compounds containing at least one epoxy group and one or more imines having at least one amino hydrogen.

68. The low VOC epoxy coating of claim 41 with the proviso that the blocked amine is not a heterocycle-containing compound having a backbone chain selected from the group consisting of polyether, polyvinyl, polyester, polyamide, polycarbonate, and novalac chains and at least two heterocyclic groups of the following general formula as side chains,



wherein R^1 and R^2 may be the same or different and each represents hydrogen, straight chain or branched C_1 to C_6 alkyl or alkenyl, or C_6 to C_8 aryl; or R^1 and R^2 taken together with the adjacent carbon atom, represents C_5 to C_7 cycloalkyl: R^3 represents C_1 to C_{10} alkylene.